

Amendments to the Specification (the references to page numbers and lines correspond to the marked-up copy of the specification attached hereto):

On page 1, delete the Title and first sentence, and insert the following new title, headings and sections:

TITLE OF THE INVENTION

ETHOXYLATED DERIVATIVES OF AMIDOAMINES AS EMULSIFIERS

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is filed under 35 U.S.C. § 371 and priority is claimed under 35 U.S.C. §§ 119, 120, and 365(b) from International Application No. PCT/EP2005/011071, filed (in a language other than English) on October 14, 2005, and from German Application No. 102 00 4051280.9, filed on October 21, 2004, the entire disclosures of which are incorporated by reference herein.

FIELD OF THE INVENTION

The application relates generally to ethoxylated derivatives of amidoamines, and more particularly, to ethoxylated derivatives of amidoamines as emulsifiers.

BACKGROUND INFORMATION

On page 3, before line 21, please insert the following new headings and section:

SUMMARY OF THE INVENTION

Briefly described, in one aspect, an ethoxylated derivative of an amidoamine according to the general formula (I): $R^1-CO-NR^2-[(CH_2)_n-NR^3]_m-CO-R^4$ in which R^1 , R^2 , R^3 and R^4 independently of one another represent a hydrogen atom, a branched or unbranched alkyl or alkenyl group containing 5 to 23 carbon atoms or a $CO-CH=CH-COOH$ group and n is a number of 1 to 6 and m is a number of 1 to 8, as an emulsifier in

drilling fluids which contain at least one continuous oil phase, an aqueous phase and additives is provided.

In another aspect, a composition, including an ethoxylated derivative of an amidoamine according to the general formula (I): $R^1-CO-NR^2-[(CH_2)_n-NR^3]_m-CO-R^4$ in which R^1 , R^2 , R^3 and R^4 independently of one another represent a hydrogen atom, a branched or unbranched alkyl or alkenyl group containing 5 to 23 carbon atoms or a $CO-CH=CH-COOH$ group and n is a number of 1 to 6 and m is a number of 1 to 8; a continuous oil phase in admixture with a limited quantity of a disperse aqueous phase (w/o invert type) is provided.

DETAILED DESCRIPTION OF THE INVENTION

On page 4, please replace the paragraph beginning on line 26, with the following amended paragraph:

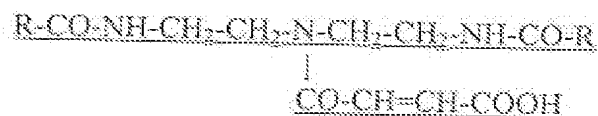
The ethoxylated amidoamines, like the compounds of formula (I) themselves, are already known. To produce the ethoxylated compounds according to the invention, amidoamines corresponding to formula (I) may be reacted with gaseous ethylene oxide at elevated temperatures in the presence of basic catalysts, preferably potassium hydroxide or sodium methylate. The reaction temperatures should be in the range from 100 to 150°C and preferably in the range from 110 to 140°C.

On page 5, line 5, please insert the following two new paragraphs:

The compounds of formula (II) are also known. They may be prepared by reacting oligoamines or polyamines, preferably diethylene triamine, triethylene tetramine and/or tetraethylene pentamine, and mixtures of these amines with fatty acids. Suitable fatty acids contain between 6 and 24 carbon atoms and may be branched, unbranched, saturated or unsaturated. Tall oil fatty acids, oleic acid, linolenic acid and/or linoleic acid are preferably used. Mixtures of the acids may also be used. In addition, it can be of

advantage to use dicarboxylic acid and preferably maleic acid, for example in the form of its anhydride, during the reaction of the fatty acids with the amines.

A preferred compound of formula (I) corresponds to the following general formula:



where R stands for tall oil fatty acid alkyl groups. Tall oil itself is a mixture of fatty acids, resin acids, so-called oxy-acids (and other oxidized resin and fatty acids) and other unsaponifiable components. Its composition varies widely according to the nature of the processed wood and its geographic origin: 15-55% fatty acids, ca. 20-65% resin acids, 1-8% oxy-acids and 6-30% other unsaponifiable components for an acid value of ca. 90-160. Tall oil is fractionated by distillation into first runnings and tall oil pitch, which are mainly burnt, and into fatty acids and tall oil resin. At least 97% of the tall oil fatty acids (1st quality) or 67% (resin acid content of 25-30%) consist of fatty acids (% by weight, based on the total quantity of fatty acids in brackets): linoleic acid and conjugated C₁₈ fatty acids (45-65), oleic acid (25-45), 5,9,12-octadecatrienoic acid (5-12) and saturated fatty acids (1-3).

On page 6, please replace the paragraph beginning on line 5, with the following amended paragraph:

Ethoxylated amidoamines which have proved to be advantageous for the purposes of the present technical teaching are those of which the content of ethylene oxide groups is between 1 and 10 parts per part amidoamine, the range from 1 to 7 being preferred and the range from 1 to 5 being particularly preferred. Ethoxylated derivatives of amidoamines corresponding to formula (I), where R¹ and R⁴ represent C₅₋₂₃ alkyl and/or alkenyl groups and R² is a CO-CH=CH-COOH group and/or a hydrogen atom are also preferred.

On page 6, please replace the paragraph beginning on line 20, with the following amended paragraph:

[[Te]] The use of the ethoxylated amidoamines according to the invention results in an improved filtrate value of the particular drilling fluid in relation to standard amidoamine-based emulsifiers. In addition, the drilling fluids formulated with the ethoxylated emulsifiers have good rheology values.

On page 11, line 24, insert the following new sentence:

The invention is further illustrated by the following examples, which are not intended to limit the scope thereof.

On page 17, after the heading "CLAIMS", insert the following new phrase:

What is claimed is: